



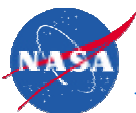
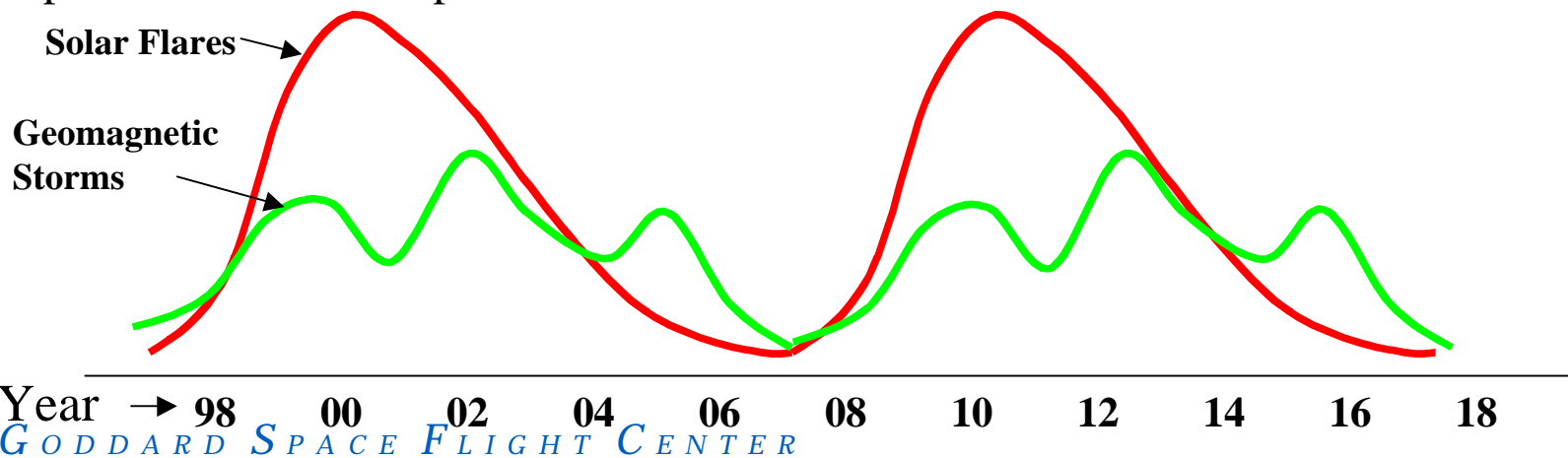
Solar Science

The solar maximum period is characterized by:

- Increased flares, sunspots, magnetic fields, and mass ejections
- 100 times brighter x-ray emissions, as well as changes in all radiation regimes
- Energetic solar particle events
- Radiation belt enhancements
- Increased heating and ionization of Earth's upper atmosphere
- Solar event induced ionospheric effects
- Complex solar and heliospheric structure

The solar minimum, or declining phase, is characterized by:

- High-speed solar wind streams
- Solar mass ejections causing geomagnetic storms
- Fewer sunspots
- Simple or bipolar heliospheric structure



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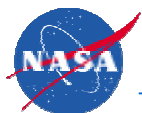
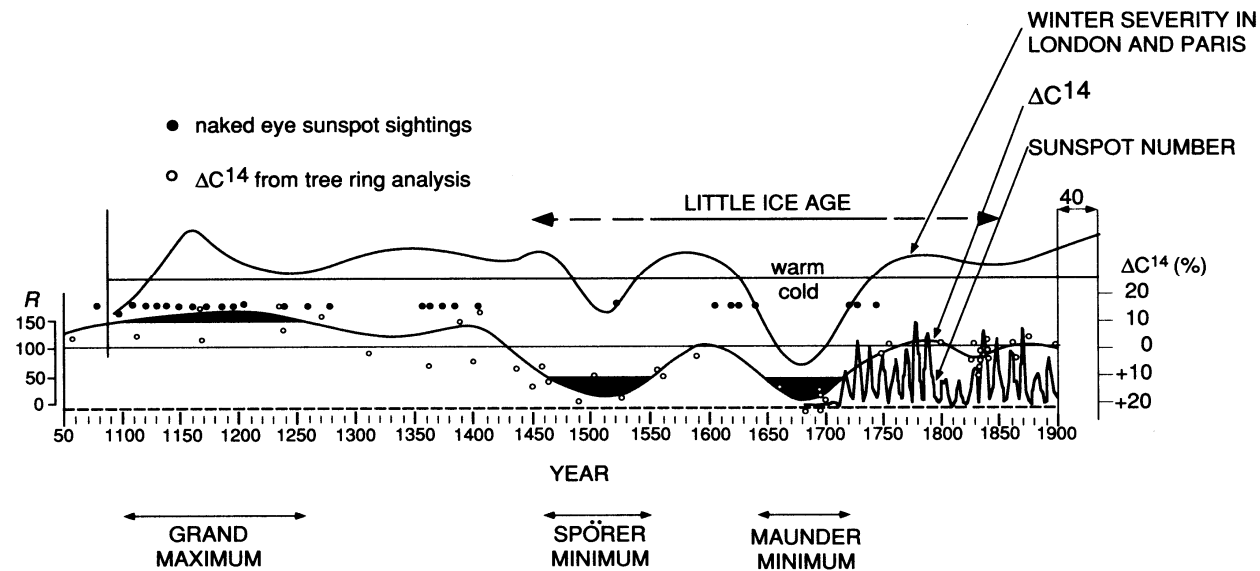
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Solar Science (cont.)

In addition to previously mentioned effects on space hardware and human health, solar phases have also had implications for Earth's climate, as shown in the graph below. Given the massive economic impact of even small changes in climate, it is beneficial to fully understand both natural and anthropogenic causes of global change.

The LWS program, in conjunction with planned Earth science initiatives, will assist substantially in this quest.



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